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Agricultural Memorandum No 493

Drainage Requirement Standards

L P Smith

Assuming that a rainfall which will only be exceeded (in 1 day or over 5 days) 10 times in 20 years is a sensible drainage standard, the figures given in Ag Mem 471 for

Heaviest 1 day falls expected in 2 years

and

Heaviest 5 day falls expected in 2 years

give a sensibly accurate assessment of drainage requirement on a county basis.

One further modification has been introduced. Ag Mem 471 dealt with 6 month (November - April) periods. The truer requirement is over the period when the soil is at capacity.

Therefore the drier areas needed a slight reduction (for a $4\frac{1}{2}$ - 6 month risk) and the wetter areas needed a slight increase (6 - $7\frac{1}{2}$ month risk).

The final figures are given in the accompanying tables.

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell

August 1972

EB/8/72/

1 day falls exceeded 10 times in 20 years when soil is at capacity

Average annual rainfall

COUNTY	500	550	600	650	700	750	800	850	900	950	1000 mm
Beds	17	18	20	21							
Berks			20	22	24	26	28	30	33		
Bucks			20	21	23	24	26	28			
Cambs	16	18	19	20							
Cheshire					22	24	26	28	30	32	34
Cornwall								27	29	30	32
Cumberland							26	27	29	31	33
Derby				22	24	26	28	30	32	34	36
Devon						28	30	31	33	35	37
Dorset					28	30	32	33	35	37	39
Durham			19	21	23	26	28	30	32	34	36
Essex	17	18	19	21							
Glous				22	24	26	27	29	31	33	34
Hants E				22	24	27	29	31	33	36	38
Hants W				23	25	27	30	32	34	37	40
I of W					26	28	30	31			
Hereford			22	23	25	27	28	30	32	34	36
Herts			19	21	22	23	25	26			
Hunts	17	18	19	21							
Kent E	19	20	21	23	26	28	30	32	35		
Kent W	18	19	21	22	25	27	29	31	34		
Lancs N							25	26	28	30	32
Lancs S							26	27	29	31	33
Leics			21	22	23	25					
Lincs:-											
Holland	18	19	20	22							
Kesteven		20	22	23	25						
Lindsey		19	20	21	23						
Middlesex		19	20	22							
Norfolk		18	19	20	22						
Northants		19	20	22	23	25					
N'humberland			19	21	24	26	28	30	32	34	36
Notts		20	22	23	25						
Oxon			20	22	24	25	27				
Rutland		20	21	22	23						
Salop				21	23	25	27	29	31	33	35
Somerset						24	26	28	30	31	33
Staffs				21	22	24	26	28	30	32	34
Suffolk	17	18	19	21							
Surrey E		18	19	21	23	26	28	30	32		
Surrey W		19	20	22	24	27	29	31	33		
Sussex				23	26	28	30	32	35	37	
Warwick			20	22	23	25					
West'land								29	30	32	34
Wilts						25	27	29	31	33	34
Worcs		19	21	22	24	26					
Yorks ER			19	21	23	26	28	30	31	33	35
NR			18	21	23	25	27	29	31	33	35
WR		19	21	23	26	29	31	32	34	36	38
S Wales							28	29	31	33	35
W Wales											32
N Wales				20	22	24	25	27	28	30	32

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5 day falls (mm. per day) exceeded 10 times in 20 years when soil is at capacity

	Average Annual Rainfall (mm)										
COUNTY	500	550	600	650	700	750	800	850	900	950	1000
Beds	6	7	7	8							
Berks			8	9	10	11	12	13	14		
Bucks			7	8	9	10	11	12			
Cambs	6	6	7	8							
Cheshire					8	9	10	11	12	13	14
Cornwall								11	12	13	14
Cumberland							10	11	12	12	13
Derby				8	9	10	11	12	13	14	15
Devon W						11	12	13	14	15	16
Devon E						12	13	14	14	15	16
Dorset					11	12	13	14	15	16	17
Durham			7	8	9	10	11	12	13	14	15
Essex	6	7	7	8							
Glous				8	9	10	11	12	12	13	14
Hants E				9	10	11	12	13	14	15	16
Hants W				9	10	11	12	14	15	16	17
I of W					11	12	12	13			
Hereford			9	10	11	12	12	13	14	15	16
Herts			7	8	9	10	10	11			
Hunts	6	7	7	8							
Kent E	7	8	8	9	10	11	12	13	15		
Kent W	7	7	8	9	10	11	12	13	14		
Lancs N							10	11	11	12	13
Lancs S							11	11	12	13	14
Leics			8	8	9	10					
Lincs:-											
Holland	6	7	7	8							
Kesteven		7	8	8	9						
Lindsey		7	7	8	9						
Middlesex		7	8	9							
Norfolk		6	7	8	9						
Northants		7	7	8	9	10					
N'humberland			7	8	9	10	11	12	13	13	14
Notts		7	8	8	9						
Oxon			8	8	9	10	11				
Rutland		7	8	8	9						
Salop				8	9	10	10	11	12	13	14
Somerset						10	11	12	13	14	15
Staffs				8	9	9	10	11	12	13	14
Suffolk	6	7	7	8							
Surrey E		7	8	8	9	11	12	13	14		
Surrey W		7	8	9	10	11	12	13	14		
Sussex E				10	11	12	13	14	15	16	
Sussex W				9	10	11	12	14	15	16	
Warwick			7	8	9	10					
W'land								12	12	13	14
Wilts						11	11	12	13	14	15
Worcs		7	8	9	9	10					
Yorks ER			7	8	9	10	11	12	13	14	14
Yorks NR			7	8	9	10	11	12	13	14	15
Yorks WR		7	8	9	10	11	12	13	13	14	15
S Wales							11	12	13	14	14
W Wales											13
N Wales				9	9	10	11	11	12	13	14

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